United States Department of Agriculture
Natural Resources Conservation Service

USDA NRCS

Update – Rangeland Ecological Site Descriptions

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ESD Activities/Efforts

- Interagency Rangeland ESD MOU
- ESIS – ESD
- ESIS – ESI – Range Database
- State & Transition Models
- Riparian Site Complexes
- Wetland Site Complexes

Interagency Rangeland ESD MOU

- Signed 05/2005
  - BLM, USFS, NRCS
- Interagency team developed 1st draft Ecological Site Description Handbook 12/2006
- Interagency policy document and final draft ESD Handbook due in 2008

ESIS - ESD

- ESD Sections
- Minimum ESD Criteria
- ESIS/ESD National Progress
- 2008 ESIS/ESD Upgrade Changes
- Draft ESIS User Guide

ESD Sections

- General Information
- Physiographic Features
- Climatic Features
- Water Features
- Representative Soil Features
- Community Phase Data
- Ecological Site Interpretations
- Supporting Information
- Rangeland Health Reference Sheet

Minimum ESD Criteria - Phase 1

All sections of ESD except:

- Community Phase Data (partial)
  - State & Transition Model
  - Data for reference state
  - Data for reference plant community phase
  - Narratives for other states
  - Photos
- Ecological Site Interpretations

ESIS/ESD National Progress

- 17 states have approved ESDs
- More states beginning to develop ESDs
  - IA, IL, MN, WI, NJ, MO
- National Implementation Strategy
  - Centralized MLRA Leadership
  - Phased Approach
  - Training Assistance
  - Interdisciplinary & Interagency Approach

2008 ESIS/ESD Upgrade Changes

- Rangeland Health Reference Sheets
- Community Phase Data
  - States (reference and alternative)
  - Community Phases
  - State Transitions
  - Restoration Pathways
  - Community Pathways

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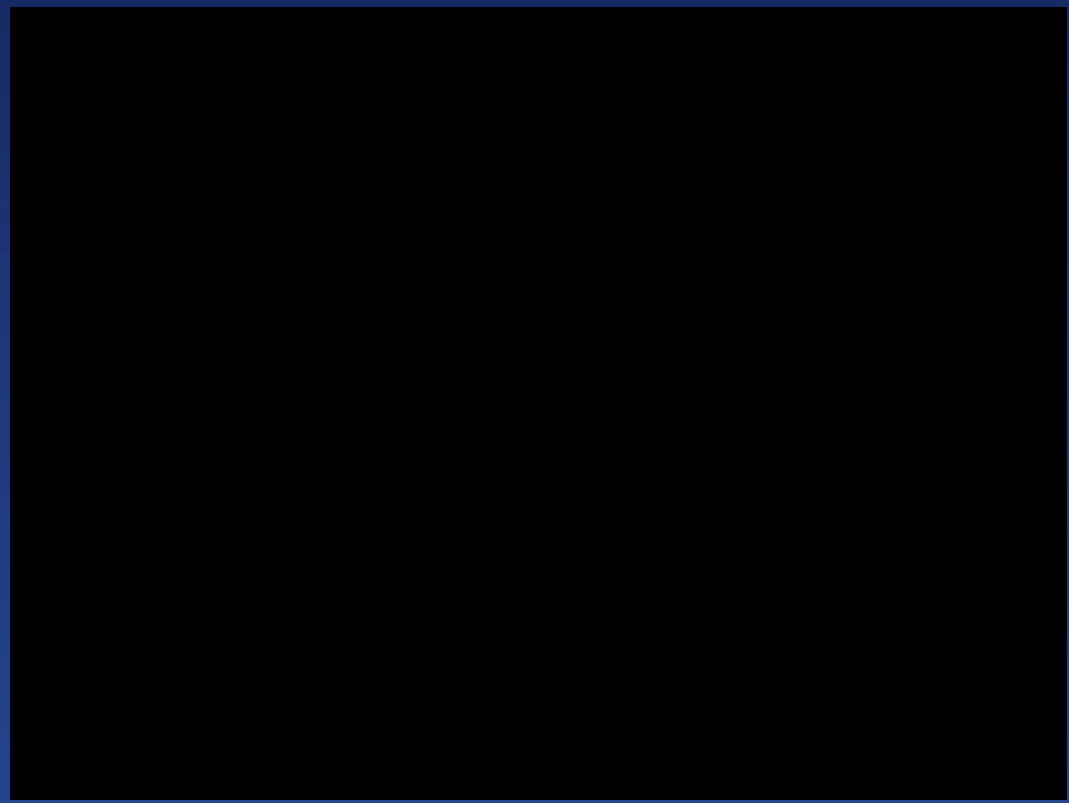
ESIS – Draft ESD User Guide

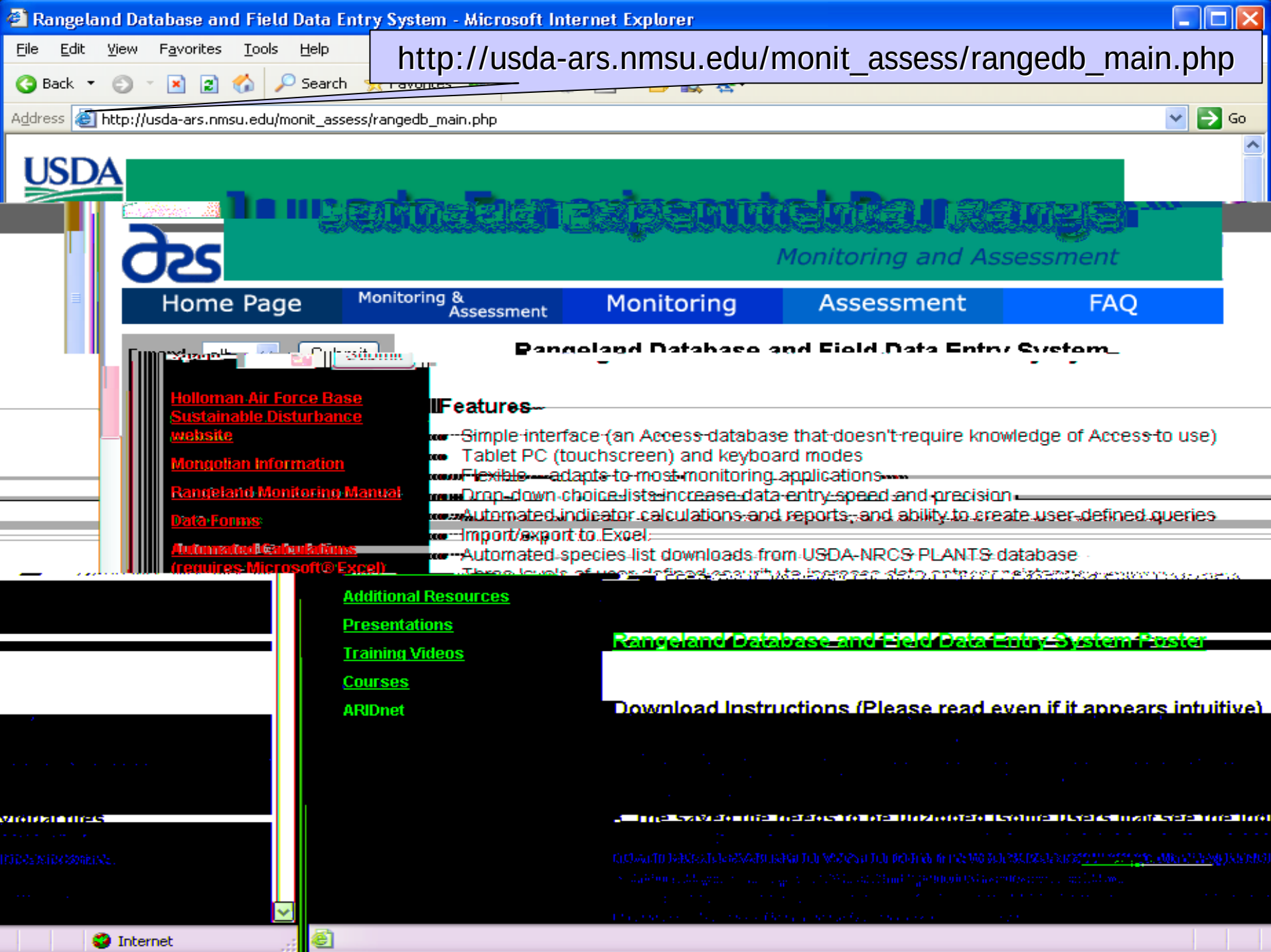
Understanding the Ecological Site Information System Database

Basic ESIS User Guide



ESIS – ESI – Range Database

- Version 1.4 currently available
  - USDA-ARS-Jornada Experimental Range
- Approval to integrate PEDON with Range DB
- 3-Tier approach to site data collection
  - Reconnaissance/Traverse
  - Ocular Estimates/Step Transects
  - Point-data Collection at Type Locations


Rangeland Database and Field Data Entry System - Microsoft Internet Explorer
http://usda-ars.nmsu.edu/monit_assess/rangedb_main.php
Monitoring and Assessment
Home Page
Monitoring & Assessment
Monitoring
Assessment
FAQ
Holloman Air Force Base Sustainable Disturbance website
Mongolian Information
Rangeland Monitoring Manual
Data Forms
Automated Calculations (requires Microsoft® Excel)
Features
Simple interface (an Access database that doesn't require knowledge of Access to use)
Tablet PC (touchscreen) and keyboard modes
Flexible—adapts to most monitoring applications
Drop-down choice lists increase data entry speed and precision
Automated indicator calculations and reports, and ability to create user-defined queries
Import/export to Excel
Automated species list downloads from USDA-NRCS PLANTS database
Additional Resources
Presentations
Training Videos
Courses
ARIDnet
Rangeland Database and Field Data Entry System Poster
Download Instructions (Please read even if it appears intuitive)
Internet

Main Menu

Exit Access

Help

Rangeland Database and Field Data Entry System

Version 1.4 - 02/15/2008

System Set-Up

- Support Tables
- Site and Plot Description

Data

- Enter/Edit Data
- Reports
- Enter/View Photos
- View PDFs

Administrator

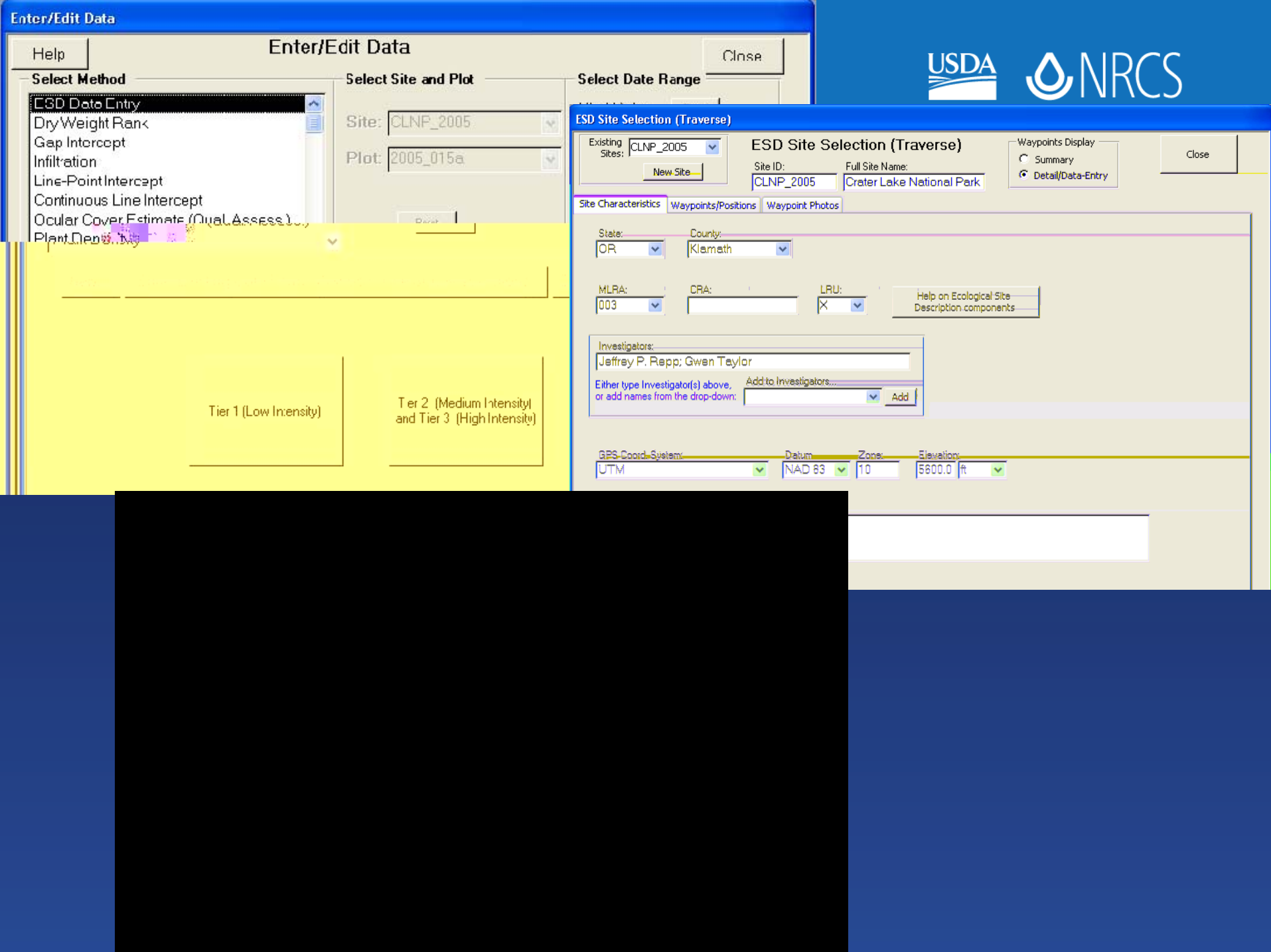
- Administrative Functions

Data-Entry Method

- (•) Keyboard/Mouse
- ( ) Touch-Screen

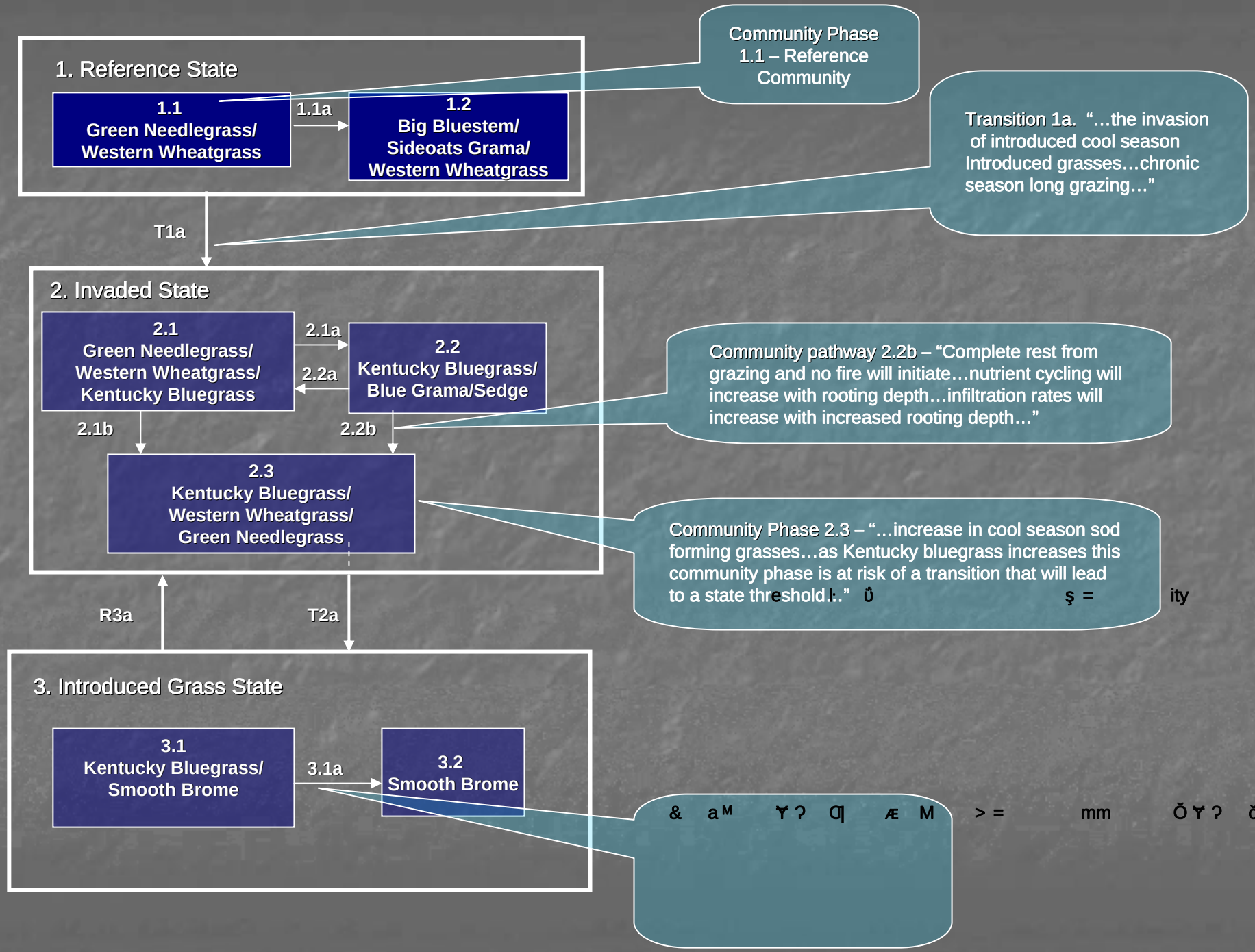
[ ] Show 'Shortcut' Menu

C:\Home\jeff.repp\My Documents\Technology\RangeDB\1.4\JPR_RangeDB 1.4.mdb

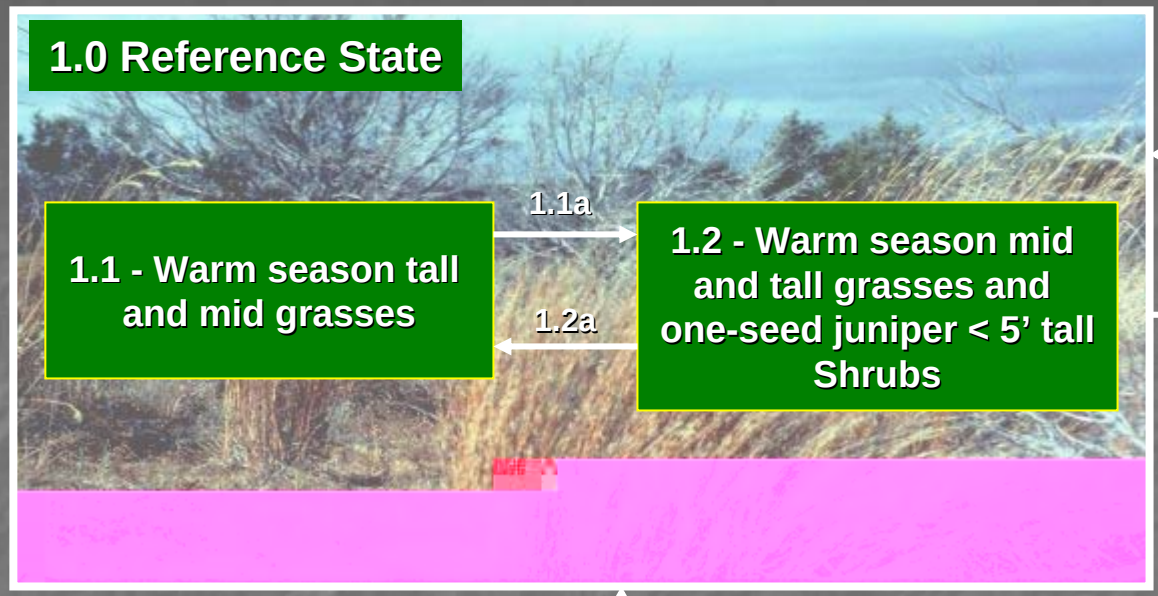

Enter/Edit Data
Help
Enter/Edit Data
Close
Select Method
ESD Data Entry
Dry Weight Rank
Gap Intercept
Infiltration
Line-Point Intercept
Continuous Line Intercept
Select Site and Plot
Site: CLNP_2005
Plot: 2005_015a
Select Date Range
Tier 1 (Low Intensity)
Tier 2 (Medium Intensity) and Tier 3 (High Intensity)
USDA
NRCS
ESD Site Selection (Traverse)
Existing Sites: CLNP_2005
New Site
ESD Site Selection (Traverse)
Site ID: CLNP_2005
Full Site Name: Crater Lake National Park
Waypoints Display
Summary
Detail/Data-Entry
Close
Site Characteristics
Waypoints/Positions
Waypoint Photos
State: OR
County: Klamath
MLRA: 003
CRA:
LRU: X
Help on Ecological Site Description components
Investigators:
Jeffrey P. Repp; Gwen Taylor
Either type Investigator(s) above, or add names from the drop-down:
Add to Investigators...
Add
GPS Coord System: UTM
Datum: NAD 83
Zone: 10
Elevation: 5600.0 ft

State & Transition Models

- Developed by Teams
- Peer Reviewed
- Reference & Alternative States
- Transitions
- Community Phases and Pathways
  - At-Risk Community Phases
- Triggers
- Thresholds


1. Reference State
1.1
Green Needlegrass/
Western Wheatgrass
1.1a
1.2
Big Bluestem/
Sideoats Grama/
Western Wheatgrass
Community Phase
1.1 – Reference
Community
Transition 1a. "…the invasion
of introduced cool season
Introduced grasses…chronic
season long grazing…"
T1a
2. Invaded State
2.1
Green Needlegrass/
Western Wheatgrass/
Kentucky Bluegrass
2.1a
2.2a
2.2
Kentucky Bluegrass/
Blue Grama/Sedge
2.1b
2.2b
Community pathway 2.2b – "Complete rest from
grazing and no fire will initiate…nutrient cycling will
increase with rooting depth…infiltration rates will
increase with increased rooting depth…"
2.3
Kentucky Bluegrass/
Western Wheatgrass/
Green Needlegrass
Community Phase 2.3 – "…increase in cool season sod
forming grasses…as Kentucky bluegrass increases this
community phase is at risk of a transition that will lead
to a state threshold…"
ity
R3a
T2a
3. Introduced Grass State
3.1
Kentucky Bluegrass/
Smooth Brome
3.1a
3.2
Smooth Brome

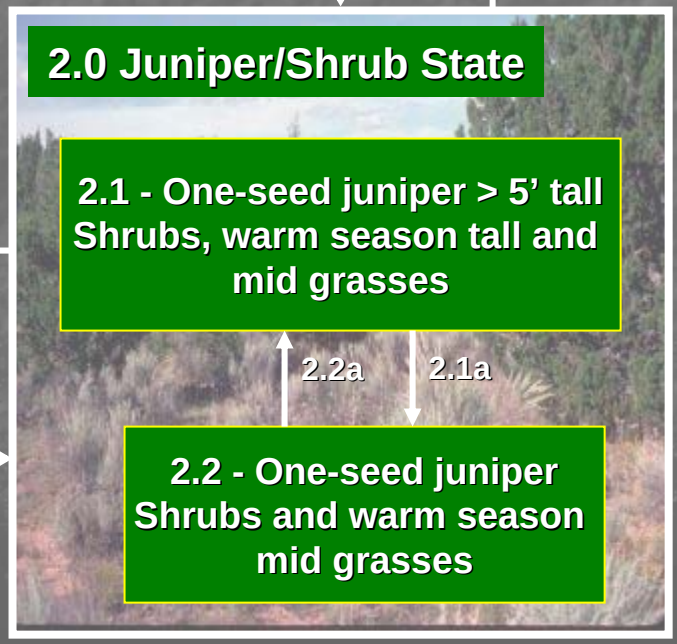
Deep Sand Savannah Ecological Site – R070XC123NM



T1a

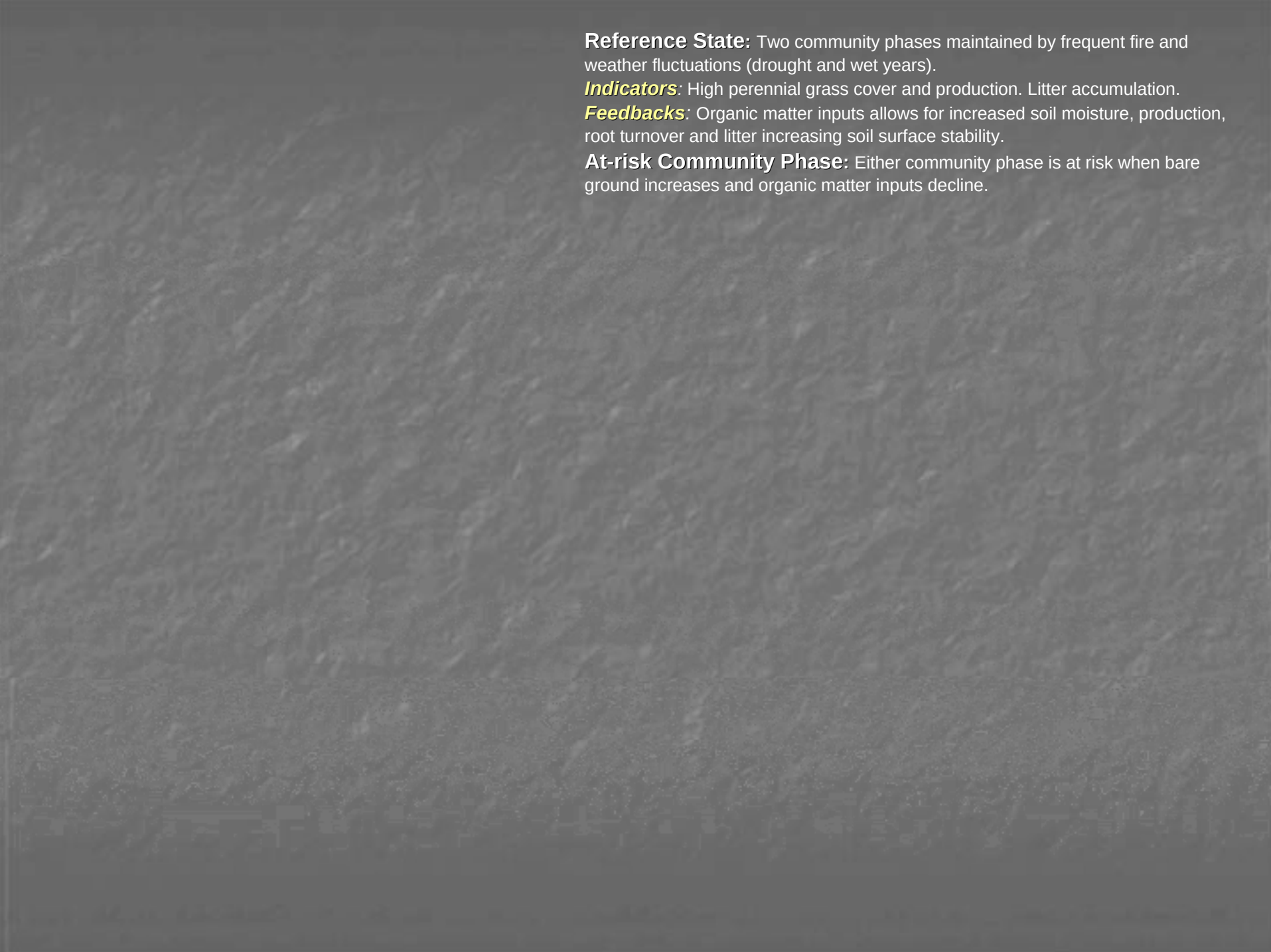
R1a

R3b



T2a

R3a



Reference State: Two community phases maintained by frequent fire and weather fluctuations (drought and wet years).

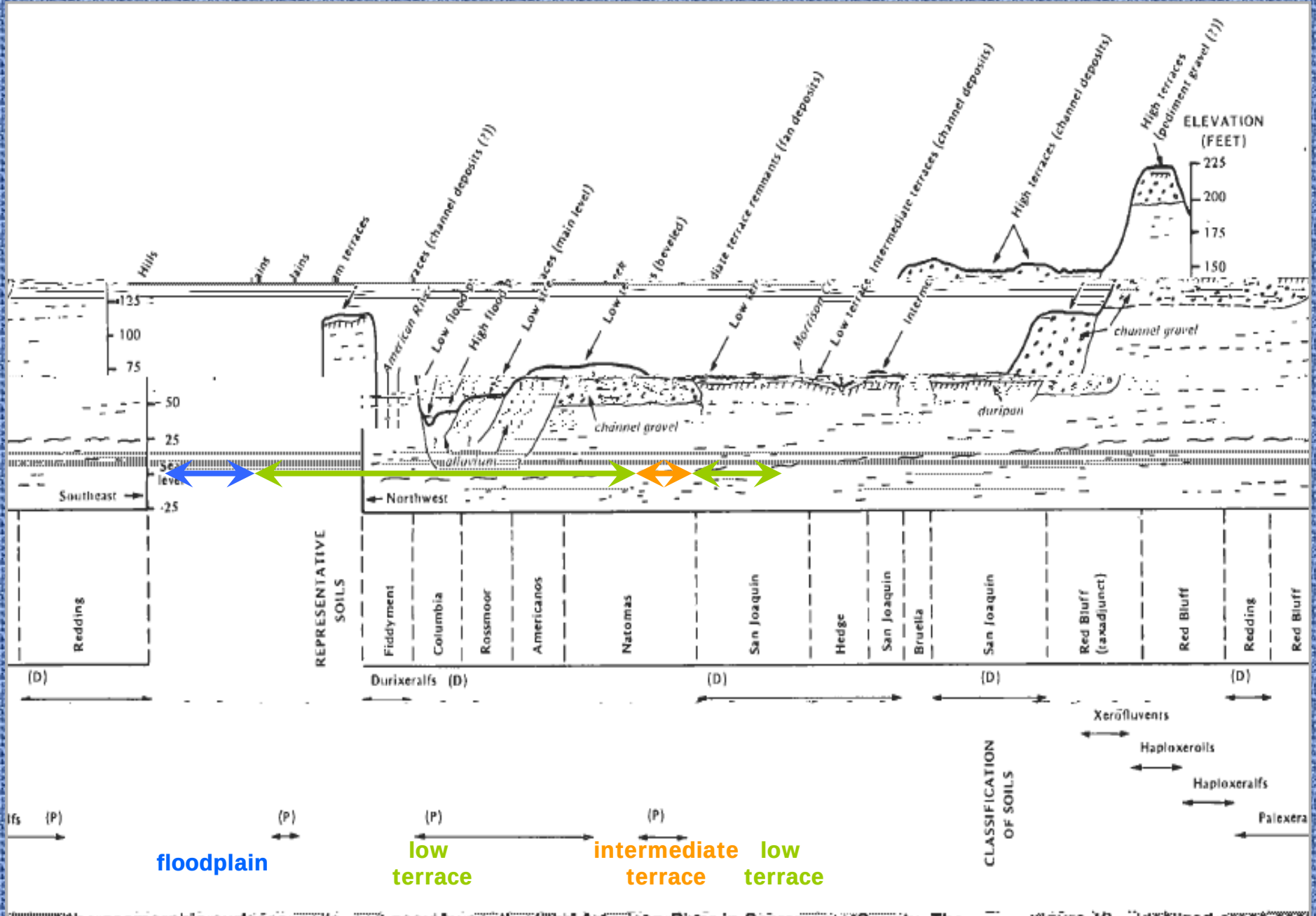
Indicators: High perennial grass cover and production. Litter accumulation.

Feedbacks: Organic matter inputs allows for increased soil moisture, production, root turnover and litter increasing soil surface stability.

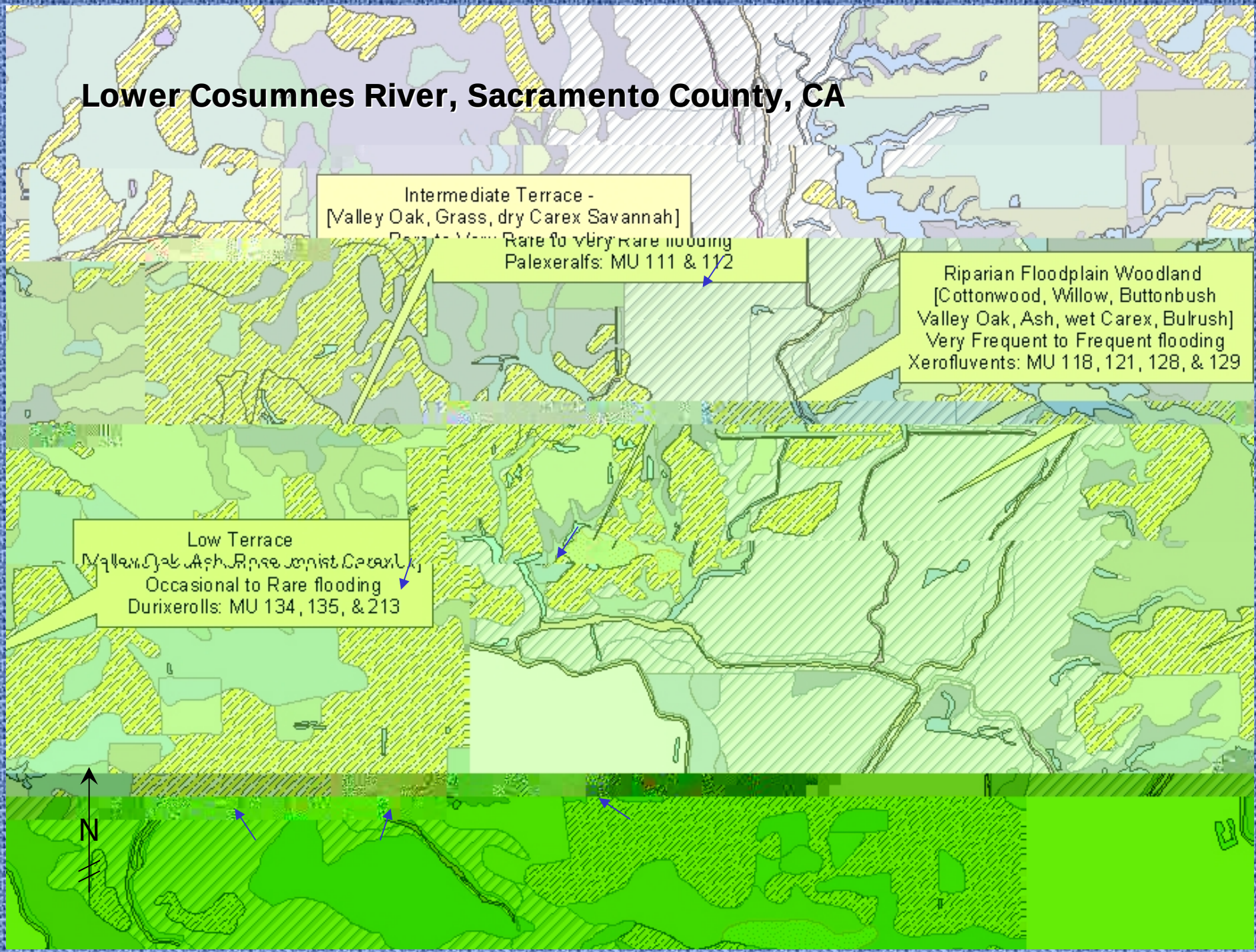
At-risk Community Phase: Either community phase is at risk when bare ground increases and organic matter inputs decline.

Riparian Ecological Site Complexes

- Valley Type & Channel Type (Rosgen)
- Climate / Elevation Characteristics
- Extends from steam outward to limit of riparian/wetland soil processes
- Includes plant community types linked by hydrological processes
- Community Phases are compilations of Plant Community Types in different temporal and spatial arrangement



...ion of the geomorphic surfaces, soils, and geology south of the American River in Sacramento County. The ... Figure 19.—Idealized cross sect...
...d. vertical scale is exaggerate...


Lower Cosumnes River, Sacramento County, CA
Intermediate Terrace -
[Valley Oak, Grass, dry Carex Savannah]
Palexeralfs: MU 111 & 112
Riparian Floodplain Woodland
[Cottonwood, Willow, Buttonbush
Valley Oak, Ash, wet Carex, Bulrush]
Very Frequent to Frequent flooding
Xerofluvents: MU 118, 121, 128, & 129
Low Terrace
Occasional to Rare flooding
Durixerolls: MU 134, 135, & 213
N

Wetland Ecological Site Complexes

- Includes Sub-Aqueous, Emergent, & Ws sica

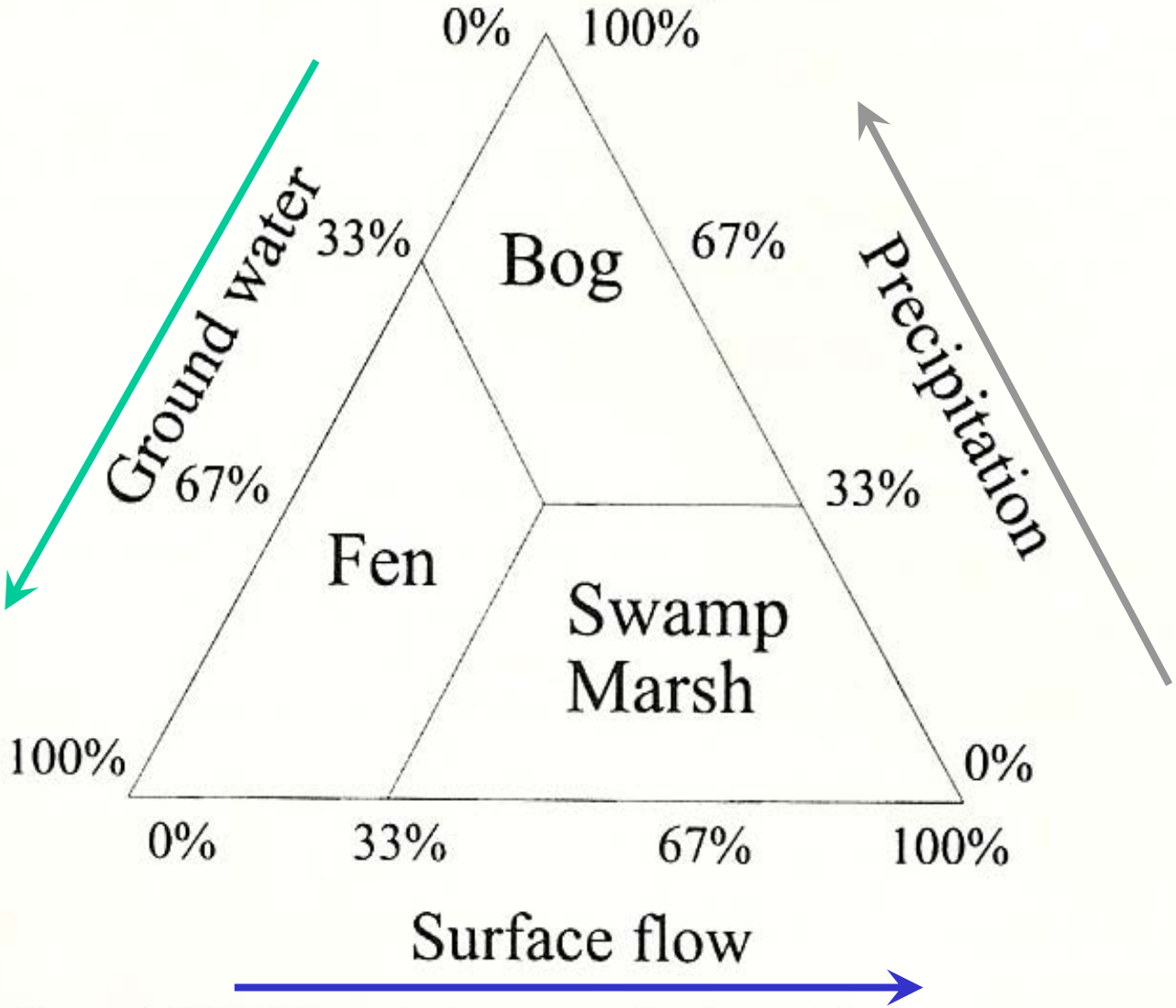


Figure 1.10 The relative contribution of three water sources: precipitation, groundwater discharge, and lateral surface flow determines three main wetland types (modified from Brinson 1993a, b).

Mountain Fen (poor-moderate rich) New Mexico

Riparian eco site, or Wetland eco site?
How many different eco sites?
What / where are the complexes?

Numbers represent different groupings of plant community types

Aerial photography 1981
Sycan Marsh, OR

Wet meadow
[Nebraska sedge]

Beach ridge
[Basin wild rye]

Floating peat mat
[Lodgepole pine,
sedge, sundew]

Mucky peat
[Beaked &
Inflated Sedge]

Moist meadow
[Tufted hairgrass]

Marsh [Soft & Hard
stem bulrush]

At the headwaters…
Wetland eco sites?
How many different eco sites?
What / where are the complexes?

Aerial photography 1981
Sycan Marsh, OR

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